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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
BAHTA, KIDEST	
ART UNIT	**PAPER NUMBER**
2125	

DATE MAILED: 10/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/838,467	OEY HEWETT ET AL.	
	Examiner	Art Unit	
	Kidest Bahta	2125	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horejsi et al. (U.S. Patent 5,239,879) in view of Lamey, Jr. et al. (U.S. Patent 6,408,219).

Regarding claims 1, 5, 7, 10, 13-14, 18, 21, 25, 29, 31, 34, 37-38, 42, 45, 49-51, Horejsi discloses a rework controller adapted to monitor a rework rate associated with the workpieces processed in the tool (Fig. 2), identify a condition where the rework rate is greater than a predetermined threshold, (Fig. 9, step 909), retrieve metrology data associated with the processing of the workpieces in the tool (Fig. 9, column 10, lines 20-46).

However, Horejsi fails to disclose a tool adapted to process a plurality of workpieces, a process controller adapted to control at least one operating recipe parameter of the tool based on a process control model having at least one control state variable and solve the control equation in reverse based on the metrology date to determine a new value for the control state variable; wherein the tool is further adapted to process a subsequent workpiece in accordance with the new value of the control state variable.

Lamey discloses a tool adapted to process a plurality of workpieces (Fig. 2. elements 40, 44 and 46), a process controller adapted to control at least one operating recipe parameter of the tool based on a process control model having at least one control state variable (column 6, lines 9-21) and solve the control equation in reverse based on the metrology date to determine a new value for the control state variable (column 5, line 66 – column 6, line 21); wherein the tool is further adapted to process a subsequent workpiece in accordance with the new value of the control state variable(column 6, lines 34-37).

Regarding claims 11-12, 19-20, 23-24, 35-36, 43-44, and 47-48, Lamey discloses tool comprises processing the plurality of workpiece in a photolithography and polishing tool (column 6, lines 49-62).

It would have been obvious to a person of ordinary skill in the art at the time of invention was made to modify the teachings of Horejsi with the teaching of Lamey in order to provide more accurate diagnosis of faults in a manufacturing rework process.

Regarding claims 2-4 and 26-28, Horejsi discloses an automatic corrective action further comprises sending an alert message to an operator of the tool (column 4, lines 21-32); logging the tool out of service (column 13, lines 26-34); logging the tool out of service includes sending a message to a process control server (Fig. 10).

Regarding claims 6, 9, 15, 17, 30, 33, 39 and 41, Horejsi discloses processing a workpiece requiring rework in the tool (column 5, lines 22-33), and controlling the processing of the workpiece requiring rework based on the determined value of the

control state variable (Fig. 9; column 13, lines 42-65; column 8, lines 50 – column 9, line 16).

Regarding claims 8, 16, 22, 32, 40 and 46, Horejsi discloses the workpieces are arranged in lots (Fig. 5) and retrieving the metrology data comprises retrieving the metrology data for workpieces in a particular lot associated with a workpiece requiring rework (Fig. 2; Fig. 3).

Response to Arguments

3. Applicant's arguments filed July 22, 2004 have been fully considered but they are not persuasive.

Regarding independint claims 1,13, 21, 25, 37, 45, and 49-51, applicant argues that Horejsi does not disclose initiating an automatic corrective action in response to a rework rate being greater than a predetermined threshold. However, examiner disagrees because Horejsi discloses that server 220 contains defect monitor 224. Monitor 224 is an application program, which monitors repair (rework) actions and generates warning messages when defects rise above a critical level (column 5, lines 55-65) and when a diagnosis is made, the computer automatically updates its databases. A plant monitoring and reporting program has access to the diagnostic statistics, and can generate a warning when a particular defect exceeds a limit, or generate defect reports on request (Abstract, column 4, lines 21-25). In addition, applicant argues that Horejsi does not disclose *determining a value of the control state* variable in response to the rework rate being greater than a predetermined threshold. However, Examiner disagrees since Horejsi discloses such limitations as follow (column

8, line 50 – column 9, line 16; column 13, lines 42-65 i.e., Messages to update the repair (rework) actions and defect database are sent by the rework station to resource/database server 220, which writes new information to storage. At the same time, defect monitor 224 monitors the frequency of confirmed defects. This monitor analyzes each new entry in the defect file of repair action 313 when it is added to the database. Based upon the stored target defect rate field 823 of defect code table 802, a determination is made on a pre event basis whether this observation is an indication that the process is going or has already gone outside its control limits (*a value of the control variable*). If a process control problem is detected defect monitor 224 sent a warning message to plant manager 216).

Furthermore, applicant argues that Fig. 9, steps 909 and 910 of Horejsi, which is Scrapping the card if the rework rate is exceed the limit is not a corrective action. However, Examiner disagrees because the phrase "corrective action" can also interpret an action taking to remove malfunction or eliminating the defects.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning communication or earlier communication from the examiner should be directed to Kidest Bahta, whose telephone number is (571) 272-3737. The examiner can normally be reached on M-F from 7:30 a.m. to 4:00 p.m. EST. If attempts to reach the examiner by phone fail, the examiner's supervisor, Leo Picard, can be reached (571) 272-3749. Additionally, the fax phone for Art Unit 2125 is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist at (703) 305-9600.

Kidest Bahta
October 14, 2004